What is claimed is:

1. A detector comprising:

at least a first nanostructured surface having a plurality of nanostructures disposed thereon;

at least a first droplet of liquid;

at least a first reagent pixel; and

means for moving said at least a first droplet of liquid across said at least a first nanostructured surface in a way such that it contacts said at least a first reagent pixel.

2. The detector of claim 1 wherein said means for moving comprises said plurality of nanostructures, wherein the density of the nanostructures in said plurality of nanostructures is varied in a way such that said at least a first droplet of liquid moves toward the area on said at least a first nanostructured surface having the highest density of said nanostructures.

3. The detector of claim 1 wherein said means for moving comprises a plurality of electrodes disposed on said at least a first nanostructured surface in a way such that, upon sequentially applying a voltage to at least one of the electrodes in said plurality of electrodes, a droplet moves in a desired direction.

4. The detector of claim 1 wherein said at least a first droplet is a droplet of reagent.

5. The detector of claim 1 wherein said at least a first droplet is adapted to absorb particles disposed on the tips of said plurality of nanostructures, said nanostructures disposed on said at least a first nanostructured surface.

6. The detector of claim 5 wherein said at least a first droplet is further adapted to transport said particles to a desired destination such as a desired reagent pixel in an array of pixels on said at least a first nanostructured surface.

7. A detector for detecting the presence of aparticle in a fluid flow, said detector comprising:

a surface having a first plurality of nanostructures disposed thereon for collecting at least a first particle;

means for moving a droplet of liquid across said first plurality of nanostructures, thus causing said droplet of liquid to absorb said at least a first particle; and

means for moving said droplet across an array of reagent pixels in a way such that said droplet contacts a particular desired reagent pixel.

8. The detector of claim 7 wherein said first plurality of nanostructures collects said at least a first particle by causing said at least a first particle to adhere to the tips of at least a first nanostructure in said first plurality of nanostructures.

9. A detector for detecting the presence of a particle in a fluid flow, said detector comprising:

a surface having a plurality of nanostructures disposed in an array of reagent pixels, wherein at least a first pixel in said array of reagent pixels has at least a first reagent disposed between said nanostructures;

a plurality of electrodes disposed on said surface;

a droplet of liquid disposed on said surface; and

a voltage source for sequentially applying a voltage to said electrodes in a way such that said droplet of liquid moves across said plurality of nanostructures on said surface to said at least a first pixel; and

means for causing said droplet of liquid to penetrate the nanostructures in said at least a first pixel, thereby generating at least a first indication as to whether said particle comprises a particular chemical substance or biological species.

10. The detector of claim 9 wherein said means for causing comprises a second voltage source for applying a voltage to said droplet or said

nanostructures, thus causing said droplet of liquid to contact said at least a first reagent.

11. The detector of claim 9 wherein said means for causing comprises a heat source for applying heat to said droplet, thus reducing the surface tension of said droplet.

12. The detector of claim 9 wherein said means for causing comprises a source of acoustic energy.

13. The detector of claim 9 wherein said means for causing comprises a source of electromagnetic energy.

14. A method for detecting a substance in a flow of fluid with a detector having a plurality of nanostructured surfaces, at least one of said surfaces having a corresponding plurality of nanostructures disposed thereon, said method comprising:

passing a fluid flow through at least a portion of said nanostructured surfaces;

collecting particles on at least one of said nanostructured surfaces;

moving a liquid droplet over a portion of said nanostructures in a way such that said liquid reaches a desired pixel on said nanostructured surface; and

penetrating said liquid droplet between nanostructures in said desired pixel,

wherein penetrating said liquid droplet between nanostructures in said desired pixel generates at least a first indication as to whether or not a particle of a particular biological species or chemical compound is disposed in said fluid flow.

15. A detector for use in detecting the presence of a particle in a fluid flow, said detector comprising:

a first nanostructured surface having a first plurality of nanostructures disposed thereon,

wherein said nanostructures in said first plurality are separated from each other by a first separation distance in a way such that at least a first size of a particle is prevented from passing between said nanostructures.

16. The detector of claim 15 further comprising a second plurality of nanostructures disposed on said first nanostructured surface,

wherein said nanostructures in said second plurality are separated from each other by a second separation distance in a way such that at least a second size of a particle is prevented from passing between said nanostructures.

17. The detector of claim 15 further comprising a second plurality of nanostructures disposed on a second nanostructured surface, said second nanostructured surface disposed in a way such that said fluid flow passes through said first nanostructured surface before reaching said second nanostructured surface,

wherein said nanostructures in said second plurality are separated from each other by a second separation distance in a way such that at least a second size of a particle is prevented from passing between said nanostructures.